DETAILED ACTION

Original Rejections

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the specification as originally filed for having a carbon potential that is about 0.15 to about 0.25 percent units higher than would be used in the absence of said catalyst. The section of specification spanning pages 8 and 9, does not describe the carbon potential as unit percentages, as no units are given and it is not stated as a percentage.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 7, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsurumi et al. (USP 4,954,474).

Tsurumi teaches heat treating metals in an atmosphere using catalyst (column 3, line 26 to column 8 line 34).

Tsurumi teaches treating the catalyst with nickel nitrate (co-catalyst) (column 5, lines 15-25).

Tsurumi teaches that the catalyst mixture can be mixed with tetrafluoroethylene (column 6, lines 28-35).

Tsurumi teaches using these catalyst compositions and heating (sintering) (column 6, lines 32-35).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 16-19, 22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsurumi et al. (USP 4,954,474) as applied to claims 1, 2, 7, and 21 above.

Tsurumi teaches a catalyst composition that has all the requisite components, but is silent as to the concentration of these in the heat treatment atmosphere, however the skilled artisan would appreciate that these components have very low vapor pressures that would serve to limit their percent of the atmosphere composition, and would further appreciate that fact the percent composition of the atmosphere these components make up will be dependent upon the temperature present as the higher the temperature the higher the vapor pressure and larger percent of the atmosphere the components will take up and the skilled artisan would be expected to be able to determine the actual percent of the heat treatment atmosphere these components make up, and be able to adjust these concentrations to achieve desired results in a predictable manner.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsurumi et al. (USP 4,954,474) as applied to claims 1, 2, 7, 16-19, 21, and 22 above, and further in view of Hayashi et al. (US 2004/0138409).

Although, Tsurumi does not explicitly teach the use of cerium or lanthanum compounds, Tsurumi does teach the use of nickel nitrate, however, because Hayashi

teaches that lanthanum and nickel nitrates are functional equivalents (paragraph 0057), it would have been prima facie obvious to someone of ordinary skill in the art at the time to replace nickel nitrate with lanthanum nitrate or to use a combination of these to achieve desired results in a predictable manner. With respect to the concentration of this components the skilled artisan would be expected to be able to determine an effective amount. However, examiner would like to note that it appears highly unlikely that lanthanum nitrate would make up 3 % of a heat treatment atmosphere given it's low vapor pressure.

Response to Arguments

Applicants argue against the 112 rejection. Applicants refer to page 14, lines 9-15 and table 1 from the substitute specification, to support the limitation "about 0.15 percentage units to about 0.25 percentage units higher than would be used in the absence of said cocatalyst". However examiner can find no evidence of any support for the range of this limitation. Therefore the rejection has been upheld.

Applicants further argue that they achieve unexpected results. This is not persuasive for at least the following reasons: The results are not commensurate with the full scope of the claims and applicants have not shown that the reference can not achieve these results, as it is noted that the reference reads or appears to read on the instant invention.

In response to the applicant's arguments and a reevaluation of the instant claims and prior art, the rejection of claims 1, 2, 7 and 21 over Bucker has been withdrawn.

Applicants argue against the rejection over Tsurumi.

Applicants argue that Tsurumi does not teach the use of gases or a finely divided cocatalyst particles. This is not persuasive because Tsurumi teaches fine particles of 20 Å in size (column 3, lines 23-24).

Applicants argue that the reference only discloses "heat treatment" is at col. 5, lines 22-23. This is not persuasive because the reference clearl discloses "heat treatment" more than this one time. It is also pointed out that a process that uses "heating" is in effect a "heat treatment". Further it is noted that the claims are written in such a broad manner that the reference is indeed seen to read on the instant claims. The fact that the disclosure of the application may contain patentable subject mater is not relevant to the patentability of the claims, as limitations from the disclosure are not improperly read into the claims.

Applicants argue that nickel nitrate is not is no the co-catalyst but that nickel nitrate is a reactant to alloy with platinum. This is not persuasive as the nickel is being added to the platinum (catalyst) therefore it is technically a co-catalyst. Further the claims have no limitations that the co-catalyst can not be added in the form of a reactant. And since these (platinum and nickel) are dispersed into a carrying agent (support), and placed in an apparatus where they are heat treaded (i.e. heat treatment equipment), the reference is seen to read on the broad claims.

Applicants argue that the application of a platinum alloy carbon catalyst and a tetrafluoroethylene dispersion solution to a carbon sheet and sintering does not anticipated the claimed invention and argue that Tsurumi is not at all similar to the claimed invention. This is not persuasive because while it may be true that the intentions of Tsurumi may not be identical to the intentions of the instant application, the disclosure of Tsurumi is seen by the examiner to read on the claims, therefore, it is seen to read on the claimed invention.

Applicants argue against the obviousness rejection over Tsurumi.

Applicants argue that the reference does not teach a composition that has all the requisites of the instant invention because it is not capable of existing in the form of a gas phase or a very fine dispersion. This is not persuasive because as stated above measures his particles in Å, which the skilled artisan would indeed consider to be "very fine".

Applicants argue against the rejection over Tsurumi in view of Hayashi.

Applicants argue that Hayashi is not related to heat treatment. This is not persuasive because Hayashi was not use to teach heat treatment, but to show that it is known in the field of catalyst that lanthanum and nickel nitrates are functional equivalents.

Applicants argue that the reference teach away from a combination. This is not persuasive because for a reference(s) to teach away there must be some teaching or suggestion that the combination will not work, and the examiner can find no such teaching or suggestion, and applicants have failed to provide any.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES E. MCDONOUGH whose telephone number is (571)272-6398. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jerry A Lorengo/
Supervisory Patent Examiner, Art Unit 1793

JEM 6/1/2008